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- (74) Agents: BEDGOOD, Robert, M. et al.; Pillsbury Winthrop LLP, 50 Fremont Street, San Francisco, CA 94120 (US).
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60/200,601 28 April 2000 (28.04.2000) US
- (71) Applicant (for all designated States except US): GEMINI SCIENCE, INC. [US/US]; Suite 940, 4275 Executive Square, La Jolla, CA 92037 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): MIKAYAMA, Toshifumi [JP/US]; 3165 Lower Ridge Road, San Diego, CA 92130 (US). TAKAHASHI, Nobuaki [JP/JP]; 5A-304, Ishihara-cho 3703, Takasaki-shi, Gunma 370-0864 (JP). CHEN, Xingjie [CN/US]; 4740 Conrad Avenue, #117, San Diego, CA 92117 (US). SCHOENBERGER, Stephen, P. [US/US]; 259 Coneflower Street, Encinitas, CA 92024 (US).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.
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- Published:
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(54) Title: HUMAN ANTI-CD40 ANTIBODIES AND METHODS OF MAKING AND USING SAME

(57) Abstract: The invention is directed to human antibodies that bind CD40 (e.g., human CD40), methods of producing the antibodies and methods of use. Invention human CD40 antibodies include antibodies that can modulate one or more activities of CD40, such as increasing or decreasing cell proliferation. Invention human CD40 antibodies are therefore useful for increasing or decreasing a CD40 activity in order to alter CD40 activity *in vivo*.



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INTERNATIONAL SEARCH REPORT

Int ernational Application No
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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C12N15/13 C07K16/28 C12N5/20 C12N5/10 A61K39/395
A61P35/00 A61P37/06 A61P31/00 G01N33/68 G01N33/577

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

BIOSIS, EMBASE, WPI Data, PAJ, EPO-Internal, SEQUENCE SEARCH

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 801 227 A (FANSLow, III ET AL.) 1 September 1998 (1998-09-01) examples claim 3	1,2,9, 10,12, 14,23, 24,30, 31,35, 44,45,47
X	WO 00 00156 A (TRUSTEES OF DARTMOUTH COLLEGE) 6 January 2000 (2000-01-06) claims 18,26,27	1-61
X	WO 96 33735 A (CELL GENESYS INC.) 31 October 1996 (1996-10-31) claims 20,27 example 5	1-61
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
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- *O* document referring to an oral disclosure, use, exhibition or other means
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- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- *Z* document member of the same patent family

Date of the actual completion of the international search

12 December 2001

Date of mailing of the international search report

04/02/2002

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl
Fax: (+31-70) 340-3016

Authorized officer

Nooi, F

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 01/13672

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 96 34096 A (CELL GENESYS INC.) 31 October 1996 (1996-10-31) claims 18,25 example 6	1-61
A	A. LAGERKVIST ET AL.: "Single, antigen-specific B cells used to generate Fab fragments using CD40-mediated amplification or direct PCR cloning." BIOTECHNIQUES, vol. 18, no. 5, May 1995 (1995-05), pages 862-869, XP000572659 Natick, USA the whole document	24-28
A	EP 0 945 465 A (CHIRON CORPORATION) 29 September 1999 (1999-09-29) examples claims	1-61
P,X	P. KARLSSON ET AL.: "Selection of human single chain antibodies against CD40." IMMUNOLOGY LETTERS, vol. 73, no. 2-3, September 2000 (2000-09), page 161 XP002185388 Amsterdam, The Netherlands abstract 358	1,2,6, 9-12,14, 15, 18-20, 30-32, 34,35, 37, 43-45, 48-50, 52-56

FURTHER INFORMATION CONTINUED FROM PCT/SA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-9, 23-31, 39-42, 58-61 (all partially), 10 ,
13-17, 35-38, 44-49 (all completely)

Isolated human anti-CD40 antibody or fragment thereof that specifically binds CD40 and decreases a CD40 activity.
Methods for the production of said antibody. Therapeutic and diagnostic uses of said antibody.

2. Claims: 1-9, 23-31, 39-42, 58-61 (all partially), 11,
18-22, 32-34, 43, 50-57 (all completely)

Isolated human anti-CD40 antibody or fragment thereof that specifically binds CD40 and increases a CD40 activity.
Methods for the production of said antibody. Therapeutic and diagnostic uses of said antibody.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.1

Although claims 30-42 (all partially, as far as an in vivo method is concerned) and claims 43-57 (all completely) are directed to a method of treatment of the human/animal body, and although claims 58 and 61 (both partially, as far as an vivo method is concerned) and claim 60 (completely) are directed to a diagnostic method practised on the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.

INTERNATIONAL SEARCH REPORT

Information on patent family members

Int'l Application No
PCT/US 01/13672

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